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X. *Remarks upon the Dillenian Herbarium.* By Dawson Turner, Esq.  
F.R.S. A.S. & L.S.

Read April 19, 1803.

THE *Historia Muscorum* of Dillenius is a work of so great authority, as well for the excellence of its figures and descriptions as for the extensive knowledge and consummate accuracy of its author, that it must be regarded as the surest medium now left us of becoming acquainted with the various tribes of Mosses and Algæ described by Linnæus and all subsequent writers down to the present day. In referring to this work, however, it has not unfrequently happened that differences of opinion have arisen as to the plants really designed by the learned Professor, and a confusion of synonymy, than which nothing is more perplexing or injurious to science, has necessarily been the consequence. To remove this in some measure appeared a task likely to be not altogether useless, and the only certain mode of effecting it was evidently by a careful reference to the original specimens. With this design Mr. Joseph Woods and myself, therefore, on the 28th of February last, went to Oxford, where, by the kindness of Professor Williams, we were allowed to examine the *Herbarium* now preserved in the botanic garden at that city. It is the result of this examination that is here offered to the Linnean Society; but it may be well in the first place to observe that our expectation was not disappointed; for the specimens, which are in good preservation,

servation, fully prove the accuracy of their former possessor, agreeing precisely with the *Historia Muscorum*, according to which they are arranged, each fastened on thin pasteboard, and marked with the name as well as generally also with the number it bears in that work. The Submersed Algæ were our leading object: in these, therefore, I shall notice every individual; but in the Mosses and Lichens shall mention no species, except where it appears that the plants designed by Dillenius have been misunderstood. In undertaking a task of this kind it would be unpardonable presumption to suppose that we have detected every error in the references of authors to this Herbarium, or that we have ourselves fallen into none. We know that the former of these is not the case, and we have every reason to fear that the latter is equally improbable. We beg, therefore, for the same indulgence towards our errors that we show towards those of others; and, above all, we deprecate the suspicion of our being urged to publish these remarks by a wish to detract from the reputation of preceding writers, or by any other motive than the most earnest desire to promote the cause of science. We offer these cursory observations as little more than an inducement for more able botanists to follow our example with greater effect. Well, indeed, may we be convinced of their imperfections; for, independent of the inadequacy of our own abilities to the task, it would require at least a week of uninterrupted leisure to examine properly the Dillenian Herbarium, and it was in our power to bestow but one day upon the investigation: this day Dr. Williams obligingly allowed to be both long and unbroken, but still it served us only to look through the Confervæ, Ulvæ, Lichens, and Hypnæ, with some attention, and to take a hasty view of the remaining genera of Mosses, but not to open a single sheet of the Jungermannia.

CONFERVÆ.

## CONFERVÆ.

No. 1. It is singular that the very first species is almost the only instance where we met with a complete difference between the figure in Dillenius's work and the plant in his *Herbarium*. The specimen evidently grew in a loose straggling manner, from which circumstance, and the tenuity of its filaments, it seems to be *C. spiralis* of Roth. Both the description, however, and figure appear designed for *C. rivularis*, to which all authors have referred them. The variety "*e muscis lecta*" is a very different plant, with the habit of *C. compacta*, Roth; but its threads are distinctly jointed, and somewhat thicker than those of that species. This also is on the same paper marked "*C. maderaspatana in Angliâ lecta*," but differs from the specimen of *C. maderaspatana* from Plukenet's Herbarium, which is of a whitish colour and unlike any species with which we are acquainted.

2. *C. nitida*. *Fl. Dan.*

3. The specimen is entirely destroyed by age; a thing very much to be regretted, as no means are now left us of clearly ascertaining the *C. fontinalis* of Linnæus, Hudson, and others, a plant about which a variety of opinions prevails among the botanists of this day.

4. *C. confragosa*. *Fl. Scot.*—Dr. Roth's *C. velutina*, under which he refers to this number, appears from specimens, with which he has been so obliging as to favour me, a distinct species.

Of 5. and 6. there are no specimens\*; the former, however, of these is so accurately described as to leave no doubt of its being

\* I have always noticed, where there are no specimens, that other botanists may know where the *Herbarium* is deficient, and consequently where no information is to be derived from a reference to it. In all these cases the figures are cut out and pasted in the places.

*C. limosa* of Dillwyn: but we have great reason to lament Dillenius's not having preserved the latter, as Hudson's *C. furcata* depends\* solely upon it.

7. A very narrow variety of *Ulva compressa*, quite bleached. Dr. Roth refers to this number for the *C. nitens* of his *Catalecta Botanica*; but the plant there intended must, according to his description, for I have never seen a specimen, be a widely dissimilar species. It may be worth remarking that he, by a typographical error, quotes "II. 6." instead of "II. 7."

8. *C. faniculacea*. *Fl. Ang.*—From the specimens, of which there are three in the Dillenian Herbarium, this is a *Fucus*, and one that I believe to be not yet described.

9. *C. dichotoma*. *Linn.*

10. Hudson, the only author who appears to have mentioned this No., has quoted it as the  $\beta$ . of his *C. furcata*: there are three specimens, one of which is *C. fracta*, *Fl. Dan.*; a second *C. amphibia*; and a third what we suppose to be a small variety of *C. dichotoma*.

11. Of this plant, the so much contested *C. bullosa*, which every botanist believes he knows, but of the existence of which, as a single species, I greatly doubt, there are two papers. The first contains four specimens; three of them, in an unexpanded state, are so bad that it would be idle to conjecture what they are: the fourth is Dr. Roth's *C. divaricata* var.  $\beta$ . *elongata*. On the other paper are also four specimens, two of which, quite bleached, may be referred to almost any thing; the third is *C. jugalis*, *Fl. Dan.*;

\* Unless, indeed, of which I am not aware, Hudson should have given specimens to any of his friends. What I have hitherto seen and received under the name of *C. furcata* leads me to coincide with a remark made by that able botanist Dr. Goodenough, that it is probably only the first stage of *C. dichotoma*, or a small variety.

the fourth, a species different from all the rest, and, we believe, not at present described.

12. *C. albida*. *Fl. Ang.*—Dr. Roth, in the 2d volume of his *Catalecta Botanica*, quotes this plant as a variety of his *Ceramium tomentosum*, for which he refers to the following number; and he observes, that it has at first sight a strong resemblance to his *C. nitens* (No. 7.): both which remarks, with all due deference to so truly able a botanist, I must, on the authority of the Herbarium itself, pronounce unfounded.

13. All authors have agreed in referring to this number as *C. tomentosa*, and it appears by the description to be intended for that plant: but the specimens, though bad, seemed evidently, to Mr. Woods and me, to be only *C. littoralis*, with a somewhat more rusty hue than usual.

14. *C. reticulata*.

15. Of this there are eight specimens, none of them sufficiently good to allow a positive opinion to be passed upon them: they appeared to us nothing more than a short variety of *C. amphibia*. I need hardly observe that this number is the *C. canalicularis* of Linnæus, or that the following number

16. is *C. rigida*. *Fl. Ang.*—This I had expected to find a variety of *C. fracta*; but it more resembles *C. glomerata*, much battered, and incrustated with calcareous matter.

17. *C. frigida*. *Roth.*—There are three specimens, none of them good, but all the same plant; so that it may be questioned if Dr. Roth was not mistaken in his remark, that Dillenius confounded this plant with *C. amphibia*, and in consequently referring only IV. 17. A. to *C. frigida*, but B. and C. to *amphibia*.

18. This appeared to us a minute variety of *C. fracta*, gathered while growing upon stones; but we beg to be understood as speaking with more than usual diffidence on this subject.



19. *C. littoralis*. Linn.—Specimens much better expanded and of a paler colour than No. 13.

20. *C. æruginosa*. Linn.

21. Dr. Roth, in the first volume of his *Catalecta Botanica*, referred this plant, with a mark of doubt, to his *C. Hermannii*, but in the second corrected this reference, and carried it to his *C. cirrosa*, with which, according to specimens sent by my friend Professor Mertens, it agrees. It has no connexion with Mr. Dillwyn's *C. repens*, t. 18. but is hardly distinct from young plants of Hudson's *C. pennata*. The specimens in the Herbarium differ extremely from the magnified figures in the *Historia Muscorum*, their ramification being entirely pinnated, and the branches simple.

22. *Sertularia spinosa*. *C. cancellata* of Linnæus, Hudson, and other authors.

23. *C. scoparia*.

24. This looks only like a stain upon the paper, if, indeed, it really exists there, which we could not determine: it does not seem to be noticed by any writer.

25. There are three specimens of this; one, *C. capillaris*, Linn., the other, what has been called the fresh water variety of it. Dr. Roth has named the latter *C. capillaris*, and the former *C. linum*.

26. A species quite new to us.

27. *C. prolifera*. Roth.?—I subjoin a mark of doubt, not from any hesitation in my own mind, but because I had not a specimen at Oxford to compare; and all quotations from memory are necessarily liable to error.

28. This appeared to Mr. Woods and me a new species, distinct from *C. rupestris*, to which Hudson has referred it as a variety.

29. *C. rupestris*. Linn.

30. *Ceramium*

30. *Ceramium asperum*. Roth.—The learned author of the *Catalecta Botanica* quotes No. 28. to this plant with a mark of doubt; but the specimens of the present number exactly agree with those he was so kind as to send me.

31. *C. glomerata*. Linn.

32. *C. vagabunda*. Linn.

33. *C. sericea*. Fl. Ang.

34. A small variety of the preceding, as Dr. Roth has justly considered it in the second volume of the *Catalecta Botanica*: in the first he has adduced it as a synonym to his *C. mutabilis*, but erroneously, as my friend Mr. Dillwyn has already stated in his account of that plant.

35. From the difference in Dillenius's three figures of this plant, it is singular that no author has observed that he has blended two distinct species under it. His Herbarium shows that A. is a small variety of *C. rubra*; B. and C. are *C. polymorpha*; D., which is not mentioned in the *Historia Muscorum*, is another variety of *rubra*.

36. *C. corallinoides*. Linn.

37. *C. setacea*. Fl. Ang.—Dr. Roth has referred this, with a mark of doubt, to the “var.  $\beta$ . *atro-purpurea*” of his *C. diaphana*: it must at the same time be admitted that the Dillenian figure is far from good.

38. It is well conjectured in the *Catalecta Botanica* that A. and B. must be different species; but it would hardly be possible to suspect, what appears from the Herbarium, that the former is *C. rubra*, the latter *Fucus subfuscus*. Dr. Roth has erroneously referred this number to his *Ceramium elongatum* (*C. elongata*, Fl. Ang.), and still more erroneously quoted *C. nodulosa* as a synonym.

39. This plant, the *C. tubulosa*, Fl. Ang., appears to be only an unusually thick variety of *C. rubra*, as was suggested to me many

years since by Col. Velley. There is a smaller specimen, marked "junior," which may be a distinct species, but is much bleached.

40. *C. diaphana*. *Fl. Scot.*—I cannot doubt but *C. nodulosa*, *Fl. Ang.* is the same plant.

41. *C. purpurascens*. *Fl. Ang.*

42. *C. gelatinosa*. *Linn.*

43. A small variety of the same.

44. *C. mutabilis*. *Roth.*

45. This has always been considered an alpine variety of *C. gelatinosa* ; but some specimens I gathered last summer in Llyn Fynnon Velan, an alpine lake on Snowdon, where I had an opportunity of examining it recent, lead me strongly to suspect it will prove a distinct species.

46. *C. atra*. *Fl. Ang.*

47. *C. fluviatilis*. *Linn.*

48. *C. torulosa*. *Roth.*—Is it really distinct from the preceding?

### TREMELLÆ.

No. 1. *Ulva lactuca*. *Linn.*

2. The same *var. β*. *Fl. Ang.*—Very different from *U. lubrica* of Roth, to which it is referred in the *Catalecta Botanica*.

3. *U. umbilicalis*. *Linn.*

4. There is no specimen of this in the Herbarium ; but, both from the description and figure, it cannot be doubted that Dr. Roth is right in referring it to his *U. plantaginea*.

Of 5. and 6. the labels are evidently transposed ; that which ought to bear the former comprises eight specimens of *U. linza*, *Fl. Dan.*, their apices turned downwards, and curiously placed together so as to look like a base, their roots all pointing upward. This is not badly represented in the figure. Of No. 6. there are

two



two specimens, both long and narrow pieces, the one of *U. lactuca*, the other of *U. umbilicalis*.

7. *U. intestinalis* in many different stages.

8. Several specimens of *U. compressa*, unbranched, varying in thickness: these do not agree with the figure.

9. *Fucus opuntia*. *Linn. Trans.*

10. *U. incrassata*. *Fl. Ang.*—Dr. Roth has quoted this to his *Rivularia Cornu damæ*, but it belongs to his *R. endivifolia*.

11. It would be difficult to determine what Dillenius really intended by this number: there are three specimens; one, *Conferva gclatinosa* β.; a second, called “green,” *C. confragosa*; and a third marked “var.” *Ulva plumosa*.

12. *U. crispa*. *Fl. Scot.*

13. I have no means of ascertaining how far this is the *U. cornuta* of Lightfoot; but I am almost certain it is no *Ulva*, but either a *Tremella*, or, what I rather incline to think, a *Clavaria*. It does not bear the slightest resemblance to *Jungermannia pinguis*, of which Hudson suspected it might be a variety.

The four remaining species enumerated by Dillenius undoubtedly belong to the genus *Tremella*; and I, therefore, from a consciousness of my ignorance in that tribe, decline offering an opinion upon them.

## USNEÆ.

No. 10. *Lichen chalybeiformis*. *Linn.*—It does not appear to differ in any respect from No. 7., which is *L. jubatus*.

16. Under this number is preserved only the narrow orange-coloured *Lichen vulpinus*, which grows in England. That which is known under this name in Germany, and which has lately been found by my valuable correspondent Dr. Flügge, with fine dark shields,

shields, is a distinct species. Of this I saw no specimen in the *Dillenian Herbarium*.

Of Nos. 17. 18. and 19. there are no specimens.

### CORALLOIDES.

No. 2. Does not belong to *Lichen byssoides*, as is justly observed in *English Botany*, but is one of the varieties of *L. pyxidatus*: the proper reference is in that work to No. 4. for *L. byssoides*; but No. 5., which is there made the var.  $\beta$ ., is *Lycoperdon equinum* figured in Sowerby's *English Fungi*.

Of No. 7. the tubercles, instead of preserving their beautiful scarlet colour, are, except in one solitary instance, quite black. Can this be the effect of age, or did Dillenius consider the individuals with red and brown tubercles as the same species?

12. (*L. alcornis*. Achar.) under A. comprehends Mr. Dickson's *L. endivifolius*, and has at the ends of the leaves some of those black spots which he and Micheli have considered as the fruit.

Of 15. there is no specimen.

20. Appears only a small variety of No. 19., and this does not seem in the least to differ from No. 7. (*L. cocciferus*).

23. and 24., to which authors appear to have made no references, are both singular prolific varieties of *L. uncialis*.

Specimens of Dr. Acharius's *L. sterilis* are mixed with No. 34., which is *L. fragilis*, Linn.

### LICHENOIDES.

No. 4. Under this number are preserved three specimens; one of *L. vernalis*, and two of *Sphæria gregaria*.

6. Has no crust, and appears clearly to be a *Fungus*.

Under No. 7. are mixed two different species of *Sphæria*.

Of

Of No. 8. there are several specimens, only one of which is in fruit: this is the same plant as is preserved in most English Herbaria under the name of *L. calcareus*, but is very different from that so called by Weis and Hoffman, though, perhaps, not specifically distinct from *L. contiguus*, Hoffm. The specimens not in fruit appear to belong to *L. varians*, Davies.

15. A. Here, with several specimens of *L. ater*, are preserved one of *L. subfuscus* and one of *L. parasemus*. B. is *L. scruposus*, as is already well known.

16. This number, besides *L. subfuscus*, comprehends a specimen marked "*sine limbo*," which is *L. ferrugineus*, Huds. and another marked "*e muro*," which is *L. epipolius*, Achar.

34. and 35., made by Lightfoot varieties of *L. tremelloides*, appear to belong with more propriety to *L. sinuatus*.

Of 40. 41. 47. 48. and 58. there are no specimens.

60. (*L. fucoides*, Dicks.) seems evidently only a small variety of the following, No. 61., (*L. fuciformis*, Dicks.) of which there are four specimens: three of these exhibit an appearance quite unknown to, or at least unnoticed by, modern botanists, being copiously furnished at their margins with small, round, sessile, concave shields, black in the centre, with a thin elevated white margin.

62. A. appears to be a narrow variety of *L. scopulorum*, Fl. Dan.; B. is *L. scopulorum*, with its common appearance; C. *L. fastigiatum*, Achar. It is to this number Linnæus has referred for his *L. calicaris*.

Of 64. 65. 66. 67. and 68. there are no specimens.

71. *L. pulverulentus* of Schreber. A single specimen, among many others, without any letter subjoined to it, has black shields, and appears a distinct species, the same as No. 72., which Hudson joined with No. 71., referring both to the  $\beta$ . of *L. stellaris*. Dr. Acharius has far more properly separated them.

73. *L. affinis*.

73. *L. affinis*. Dicks. From the description in the *Historia Muscorum*, it must be concluded that Dillenius, like most other botanists, confounded this with *L. plumbeus*, *Fl. Scot.*

75. Not *L. centrifugus*, *Linn.* but *conspersus*, *Achar.*, as quoted by that learned author.

77. and 78. both belong to *L. olivaceus*, differing only in the edges of the scutellæ being smooth in the one and ciliated in the other.

Of 79. there is no specimen; nor is there of 82., the famous *L. ampullaceus*; which is very singular, the circumstances attending its being stolen, and afterwards restored by Professor Von Jacquin to Dr. Sibthorp, being sufficiently known to the botanical world. It is, I believe, now satisfactorily ascertained that the plant is only a variety, or rather *lusus naturæ*, of *L. glaucus*; but still the replacing of the original specimen in the Herbarium as a curiosity, and almost an unique, is very much to be desired.

From No. 84. to No. 95., inclusive, the specimens are all wanting; of Nos. 110. and 112. there are no specimens.

117., referred by Acharius to his *L. hirsutus*, is *L. murinus* of that author: Dr. Withering on this number rests his *L. Dillenii*; so that these two plants are to be joined.

The specimens of Nos. 132. 133. 134. and 135. are wanting.

### SPHAGNUM.

Nothing like capsules, nor like what Dillenius took for capsules, now remains on the specimens of *Sphagnum alpinum*, *Linn.* preserved in the Herbarium: from the observations, however, of the Rev. H. Davies, who examined it while they were still in existence, I am authorized to say, that what Dillenius considered the fruit was certainly not so, nor had it any real connexion with the plant. From what I observed myself last summer in the neighbourhood

bourhood of Snowdon, I am inclined to think it probable he was deceive d by some old flowers of *Erica vulgaris* falling among the *Sphagnum*.

### FONTINALIS.

No. 2. *Fontinalis minor*, Linn. agrees exactly with specimens of Hedwig's *Trichostomum fontinalioides* sent me from Germany.

### HYPNUM.

No. 4. *Hypnum acacioides*, Linn.—I could find no difference, except in the shortness of the peduncles, a circumstance most probably accidental, between this and Mr. Dickson's *H. asplenoides*.

6. *H. sylvaticum*, Fl. Ang. seems, as Hedwig suspected, to be merely a variety of the preceding number (*H. denticulatum*, Linn.); and No. 9. differs in nothing but its darker colour. This last Linnæus described in the *Species Plantarum* under the name of *H. ornithopodioides*, but evidently depended wholly upon Dillenius.

19. A., which Hedwig supposed to belong to his *H. crista castrensis*, appears to be his *H. filicinum*, and B. C. D. E. F. his *H. commutatum*: but I speak with much diffidence, not being at all convinced that I understand the specific difference between these plants.

20. Dillenius has under this number joined Hedwig's *H. crista castrensis*, and *molluscum*; the former sent him by Haller, the latter found in England. Linnæus, Hudson, and others refer all this number to their *H. crista castrensis*; but it certainly includes two very distinct species.

24. Reference is made in the *Species Muscorum* to A. and B. of this number only under *H. rugosum*; but by the Herbarium, Mr. Dickson appears to be clearly right in referring the whole to that species.



32. *H. prolixum*, Dicks. seems to differ from the preceding number (*H. riparioides*, Hedw.) only in having grown in a situation where it was drawn by the current to a greater length.

37. Dillenius appears to have mixed under this number specimens of *H. lutescens* and *nitens*; the former, "*e Monte Weddenberg*," the latter "*e pratis uliginosis circa Gissam*."

39. Can hardly be any thing more than a small variety of *H. squarrosum*.

52. *H. murale*, Dicks.---I could discover no difference between this and *H. confertum*, Dicks.

64. This number has been uniformly quoted as *H. serpens*, Linn. and the figure appears to have been taken from that species; but I am much mistaken if all the specimens do not belong to *Leskea subtilis*, Hedw.

Of 72. and 73. there are no specimens.

#### BRYUM.

No. 4. Hudson has referred this number to *Splachnum vasculosum*, Linn. and Mr. Dickson to his *S. ovatum*; but the specimens agree with his *S. gracile*.

16. A. and B. are *Dicranum scoparium*; C. *Dicranum polysetum*, Swartz.; and D. a species not yet described, which is to appear in the *Flora Britannica* under the name of *Dicranum majus*.

27. Of this number, B. C. D. E. are *Trichostomum canescens*; A. F. G. *Trichostomum heterostichum*.

41. *Bryum polyphyllum*, Dicks.; widely different from *Fissidens polycarpus*, Hedw. with which Hedwig and Hoffman have united it.

Having now concluded my remarks upon the Dillenian Herbarium, I must further trespass on the indulgence of the Linnean Society, by observing that, when I began these observations, the  
idea

idea which most forcibly occurred to my mind was that of their necessarily imperfect nature ; but, on reading over what I have written, I am far more struck with the apparent presumption of undertaking thus freely to comment upon the works of the most celebrated naturalists that ever lived. I trust, however, the Society will agree with me, that this presumption exists only in appearance ; for I have done nothing more than observed what, had they enjoyed a similar advantage, they would themselves have observed long since, and the difficulty\* of conveying an adequate idea of a plant by descriptions, or sometimes even by figures, is too great for it to be possible for the most accurate observer always to avoid mistakes in references. I have indeed one satisfaction, which is the consciousness that I incur no risk of a charge of detraction ; for Dr. Roth, the author whose works have most frequently fallen under my notice, ranks too highly as a botanist, and has too many claims upon my esteem as an individual, to leave any apprehension of such a suspicion. I will only add that, spite of the progress made in our knowledge of the class *Cryptogamia* since the days of Dillenius, the excellence of his *Historia Muscorum* is so great, and its utility to every student so indispensable, that, as the work itself is become extremely scarce, although impressions of the plates may far more easily be procured, I do not think any botanist, who has sufficient leisure for the undertaking, could engage in a more necessary task than the re-publication of the letter-press, adding specific names and descriptions from the writings of Linnæus, Roth, Hedwig, and Acharius.

YARMOUTH,  
6th April, 1803.

\* This difficulty is far greater among the *Conservæ* than among the *Musci*, or any other part of the *Algæ*, unless high magnifying powers are employed : for want of these, and of colouring to his plates, they are in many instances absolutely useless.